

ABSTRACT OF THE DISCLOSURE

5 A fuel reforming apparatus includes a premixed fuel tank. In the premixed fuel tank, premixed fuel which is formed by emulsifying gasoline and water that are mixed with each other at a predetermined ratio, using an emulsifier. The premixed fuel is sprayed into a vaporizing portion through a nozzle. Heat can be supplied to the vaporizing portion by the reformer in which oxidation reaction proceeds, a first heating portion, and air supplied to the vaporizing portion through a heat exchanger. The premixed fuel sprayed into the vaporizing portion is vaporized immediately by the thus supplied heat, and is supplied to the reformer. In addition, air which has been humidified in a humidifying module can be supplied to the vaporizing portion.

10